

ITS Field Operational Test Summary

Electronic Processing at International Crossings

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Introduction

The Electronic Processing at International Crossings (EPIC) ITS Field Operational Test demonstrates an electronic clearance system to accelerate the crossing of commercial vehicles through the US-Mexican border. The primary goal of the EPIC Field Operational Test is to demonstrate the potential to increase productivity to motor carriers and state administrators by automating and integrating some administrative functions. These administrative functions include vehicle registration, safety, fee payment, tax and insurance compliance, and trip permit issuance. The system will electronically detect participating vehicles and notify regulatory agencies. The regulatory agency will provide an electronic clearance and notification of clearance status to the driver through a transponder mounted inside the windshield of the vehicle. Cleared vehicles may proceed to their destination without additional delays for credential, vehicle or driver verification.

The test takes place at the US-Mexican border in Nogales, AZ. Test operations began in November 1996 and will conclude in May 1998. The final evaluation report is expected in early August 1998.

Project Description

The EPIC Field Operational Test demonstrates and tests the capability of a linked electronic system to more efficiently process motor carriers through international border crossings. The system consists of dedicated short-range communications (DSRC) and other automated electronic components. The system aims to increase productivity for motor carriers and state administrators. The EPIC concept will benefit motor carriers and state agencies by creating an information management solution. This solution efficiently links each independent processing step through an Internet-based operations platform. This platform makes the information accessible to those who need it within the transportation industry. Regulatory agencies contribute to this information via a secure, agency accessible network.

The main objectives of the test are to:

- Establish methods for reducing impacts of institutional and legal barriers to processing commercial motor vehicles through international border crossings
- Utilize electronic vehicle, carrier, and driver information necessary to meet regulatory needs
- Integrate existing regulatory agency information databases
- Provide electronic trip information and verify the commercial driver's license (CDL) of the vehicle operator.

The technologies demonstrated in this test and their respective functions include:

- Internet link to transmit information for pre-trip processing and clearance functions

- RF (radio frequency) vehicle to roadside communications, also known as dedicated short range communications systems (DSRC), to identify the vehicle and communicate with the driver
- Electronic photographs to enhance the driver clearance process for CDL and safety purposes used by the Arizona Department of Transportation and Department of Public Safety.
- Traffic management and control systems to minimize average processing times for northbound movements and to monitor border traffic congestion and conditions.

The system operates under real world conditions with 5 motor carriers participating in the test. Three of the five carriers that are actively participating have a total of seven trucks currently equipped with transponders. These trucks make commercial movements into the US at Nogales. The test monitors the time it takes each movement to cross the immediate area of the border zone and the efficiency with which the Arizona Department of Transportation (ADOT) processes each movement. The test also monitors and will evaluate the usefulness of the Internet clearance status process. Figure shows a schematic of the EPIC System.

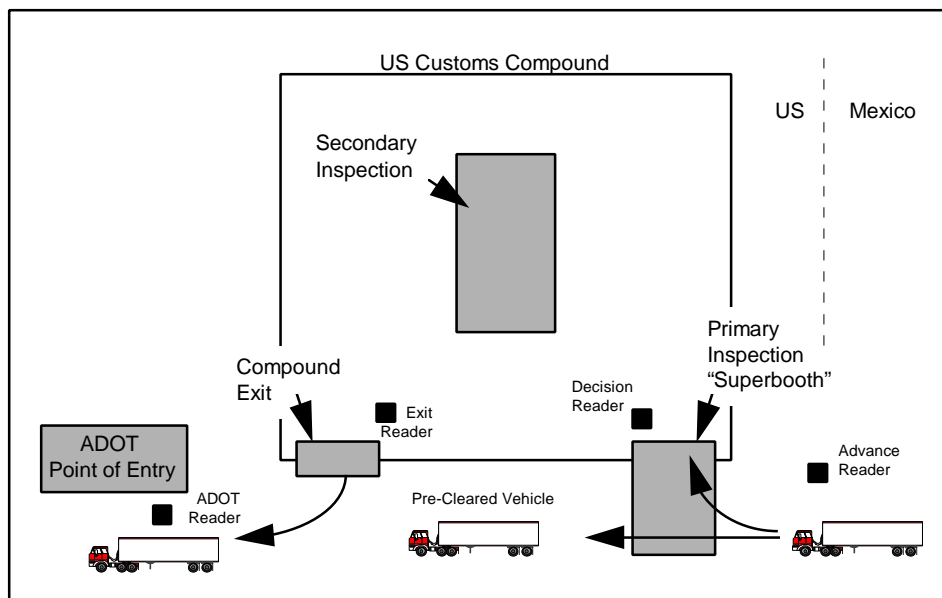


Figure 1: EPIC System Overview

The test's primary evaluation goals are to assess system effectiveness, evaluate system operation, determine physical requirements, evaluate user acceptance, and assess institutional issues.

Test Status

The test is currently in operation and is processing trucks from the three participating motor carriers. The physical layout of the customs compound where the test is being conducted has undergone several changes during the last half of 1997. One change is the installation of an elevated customs inspector booth and a Customs compound by-pass lane. Customs and ADOT officials staff the new booth, called a "Superbooth." About one-third of the trucks crossing the border proceed through the Superbooth lane. From this lane, the trucks by-pass the main compound and proceed directly to the weigh scales. The inspectors send those trucks without proper credentials or those suspected of other infractions back to the compound for more thorough inspection. The Superbooth lane is equipped with a transponder reader and an EPIC

processing computer. Test personnel will gather data at this lane in addition to the previously equipped lanes and other locations at the compound.

Evaluators are gathering baseline data. This data includes current cycle times for trucks crossing the border. The data also includes movement and credentialing information collected electronically from transponder equipped trucks through the customs compound traffic control system. The final evaluation report is expected in early August 1998.

Test Partners

American Trucking Associations Foundation

Arizona Department of Transportation (ADOT)

Federal Highway Administration

HELP Inc.

Hughes TMS

Lockheed Martin IMS

PB Farradyne

References

The EPIC Field Operational Test web site: <http://www.epic-ibc.com/>

No currently published reports, articles, or papers.